WHAT IS CLAIMED IS:

1. A coating device for selectively applying a coating to surfaces of an object, the device applying the coating based upon optical properties of the surfaces such that the coating is applied to surfaces of a first type and is not applied to surfaces of a second type, the first type of surface being optically distinguishable from the second type of surface, the coating device comprising:

(a) at least one object-holding element configured to hold the object while a coating is applied;

(b) at least one optical scanning device deployed so as to scan at least a portion of the object, said optical scanning device configured so as to produce output indicative of the types of surfaces of the object;

(c) at least one coating applicator deployed so as to deposit a fluid so as to coat at least a portion of the object;

(d) at least one fluid delivery system in fluid communication so as to supply said fluid to said coating applicator;

(e) a processing unit being responsive at least to said output so as to selectively activate said coating applicator, thereby applying said coating substantially only to surfaces of the first type; and

(f) a drive system configured so as to provide relative motion between the surface of the object and said coating applicator, and between the surface of the object and said optical scanning device.

2. The coating device of claim 1, wherein said drive system is configured so as to rotate said object-holding element about an axis perpendicular to a direction of application of said coating applicator.

3. The coating device of claim 1, wherein said at least one object-holding element is implemented as two object-holding elements configured so as to simultaneously support the object at two different regions along a length of the object.

4. The coating device of claim 3, wherein said two object-holding elements are mechanically linked so as to rotate synchronously about a single axis, said axis being perpendicular to a direction of application of said coating applicator.

5. The coating device of claim 1, wherein said at least one coating applicator includes a pressure-pulse actuated drop-ejection system with at least one nozzle.

6. The coating device of claim 1, wherein a spatial relationship between said coating applicator and said object is variable.

7. The coating device of claim 6, wherein said spatial relationship is varied along a first axis that is parallel to a direction of application of said

coating applicator, and a second axis that is perpendicular to said direction of application of said coating applicator.

8. The coating device of claim 7, wherein said coating applicator is displaceable relative to said object-holding element, said displacement being along said first axis and said second axis, thereby varying said spatial relationship.

9. The coating device of claim 8, wherein both said coating applicator and said optical scanning device are deployed on a displaceable applicator base, displaceable relative to said object-holding element, said displacement being along said first axis and said second axis, thereby varying said spatial relationship.

10. The coating device of claim 1, wherein said at least one coating applicator is implemented as a plurality of coating applicators and said at least one fluid delivery system is implemented as an equal number of fluid delivery systems, each fluid delivery system supplying a different fluid coating material to said coating applicator with which said each fluid delivery system is in fluid communication.

11. The coating device of claim 1, wherein the object is a catheter that includes a balloon portion on which a stent is deployed, such that said stent is a surface of the first type and said balloon is a surface of the second type surface.

12. The coating device of claim 1, wherein said processing unit is responsive to an indication of said relative motion so as to change operational parameters of the coating device as required.

13. The coating device of claim 1, wherein said object-holding element, said coating applicator, said optical scanning device, said drive system and at least a portion of said fluid delivery system are deployed within a housing that includes an application compartment.

14. The coating device of claim 13, wherein said housing includes a base housing section and a detachable housing section.

15. The coating device of claim 14, wherein said application compartment is defined by portions of both said base housing section and said detachable housing section.

16. The coating device of claim 15, wherein said base housing section includes said coating applicator, at least a portion of said fluid delivery system, said optical scanning device and said processing unit and at least a first portion of said drive system, and said detachable housing section includes said object-holding element and at least a second portion of said drive system.

17. The coating device of claim 16, wherein said base housing section includes at least one fluid delivery system.

18. The coating device of claim 17, wherein said detachable housing section is disposable.

19. The coating device of claim 13, wherein said application compartment is a substantially sterile environment.

20. The coating device of claim 13, wherein said coating applicator, and said fluid delivery system are included in a removable sub-housing, said removable sub-housing being deployed with in said application compartment and said removable housing being detachably connected to said processing unit.

21. A coating device for selectively applying a coating to surfaces of an object, the device applying the coating based upon optical properties of the surfaces such that the coating is applied to surfaces of a first type and is not applied to surfaces of a second type, the first type of surface being optically distinguishable from the second type of surface, the coating device comprising:

(a) a housing which includes an application compartment;

(b) at least one object-holding element deployed within said application compartment, said object-holding element configured to hold the object to which a coating is applied;

(c) a displaceable applicator base deployed within said application compartment, said applicator base including:

(i) at least one coating applicator aligned so as to deposit a fluid whereby at least a portion of the object is coated; and

(ii) at least one optical scanning device deployed so as to scan at least a portion of the object, said optical scanning device configured so as to produce output indicative of the different types of surfaces of the object, said displacement of said applicator base resulting in a variance of a spatial relationship between said coating applicator base and the object;

(d) at least one fluid delivery system in fluid communication so as to supply said fluid to said coating applicator;

(e) a processing unit being responsive at least to said output so as to selectively activate said coating applicator, thereby applying said coating substantially only to surfaces of the first type; and

(f) a drive system configured so as to provide relative motion between the surface of the object and said applicator base.

22. The coating device of claim 21, wherein said housing includes a base housing section and a detachable housing section.

23. The coating device of claim 22, wherein said application compartment is defined by portions of both said base housing and said detachable housing section.

24. The coating device of claim 23, wherein said base housing section includes said displaceable applicator base, at least a portion of said fluid delivery system, and said processing unit, and at least a first portion of said drive system, and said detachable housing section includes said object-holding element and at least a second portion of said drive system.

25. The coating device of claim 24, wherein said base housing section includes at least one fluid delivery system.

26. The coating device of claim 25, wherein said detachable housing section is disposable.

27. The coating device of claim 21, wherein said drive system is configured so as to rotate said object-holding element about an axis perpendicular to a direction of application of said coating applicator.

28. The coating device of claim 21, wherein said at least one object-holding element is implemented as two object-holding elements configured so as to simultaneously support the object at two different regions along a length of the object.

29. The coating device of claim 28, wherein said two object-holding elements are mechanically linked so as to rotate synchronously about a single

axis, said axis being perpendicular to a direction of application of said coating applicator.

30. The coating device of claim 21, wherein said at least one coating applicator includes a pressure-pulse actuated drop-ejection system with at least one nozzle.

31. The coating device of claim 21, wherein said at least one fluid delivery system is deployed in said base housing.

32. The coating device of claim 21, wherein said at least one coating applicator is implemented as a plurality of coating applicators and said at least one fluid delivery system is implemented as a like number of fluid delivery systems, each fluid delivery system supplying a different fluid coating material to said coating applicator with which said each fluid delivery system is in fluid communication.

33. The coating device of claim 21, wherein said coating applicator, and said fluid delivery system are included in a removable sub-housing, said removable sub-housing being detachably connected to said displaceable applicator base.

34. The coating device of claim 21, wherein said spatial relationship is varied along two axes, a first axis that is parallel to a direction of application of

said coating applicator, and a second axis that is perpendicular to said direction of application of said coating applicator.

35. The coating device of claim 21, wherein the object is a catheter that includes a balloon portion on which a stent is deployed, such that said stent is a surface of the first type and said balloon is a surface of the second type.

36. The coating device of claim 21, wherein said processing unit is responsive to an indication of said relative motion so as to change operational parameters of the coating device as required.

37. A coating method for selectively applying a coating to surfaces of an object, the method applying the coating based upon optical properties of the surfaces such that the coating is applied to surfaces of a first type and is not applied to surfaces of a second type, the first type of surface being optically distinguishable from the second type of surface, the coating device comprising:

(a) generating relative movement between the object and at least one optical scanning device and at least one coating applicator;

(b) optically scanning at least a portion of the object by use of said at least one optical scanning device so as to produce output indicative of the different types of surfaces of the object;

(c) responding to said output by selectively activating said coating applicator, thereby applying the coating substantially only to surfaces of the first type.

38. The coating method of claim 37, wherein said relative movement includes rotating the object about an axis perpendicular to a direction of application of said coating applicator.

39. The coating method of claim 37, further comprising simultaneously supporting the object at two different regions along a length of the object.

40. The coating method of claim 37, wherein said selective activation includes selectively activating a pressure-pulse actuated drop-ejection system with at least one nozzle.

41. The coating method of claim 37, wherein said selective activation includes selectively activating a pressure-pulse actuated drop-ejection system with at least one nozzle that is included in a removable sub-housing, said removable sub-housing further including a fluid delivery system in fluid communication so as to supply coating material to said coating applicator.

42. The coating method of claim 37, wherein said applying is preformed by selectively activating one of a plurality of coating applicators, wherein said at least one coating applicator implemented as said plurality of coating applicators, each of said plurality of coating applicators applying a different coating.

43. The coating method of claim 42, wherein said applying is preformed by selectively activating, in sequence, said plurality of coating applicators, thereby applying a plurality of layered coats, each one of said plurality of layered coats being of a coating material that is different from adjacent layered coats.

44. The coating method of claim 37, wherein responding to said output includes said output being indicative of a balloon portion of catheter and a stent deployed on said balloon, such that said stent is a surface of the first type and said balloon is a surface of the second type.

45. The coating method of claim 37, wherein responding to said output includes said output being indicative only of a surface of the first type thereby applying the coating to substantially the entire surface of the object.

46. The coating method of claim 37, further comprising varying a spatial relationship between said coating applicator and the object.

47. The coating method of claim 46, wherein said varying is along two axes, a first axis that is parallel to a direction of application of said coating applicator, and a second axis that is perpendicular to said direction of application of said coating applicator.

48. The coating method of claim 47, wherein said varying is accomplished by displacing said coating applicator.

49. The coating method of claim 48, wherein said varying is accomplished by varying the spatial relationship between said object and a displaceable applicator base upon which said at least one coating applicator and said at least one optical scanning device are deployed.

50. The coating method of claim 49, wherein controlling said varying is accomplished by said processing unit.

51. The coating method of claim 37, further comprising responding to an indication of said relative motion so as to change operational parameters of the coating device as required.

52. The coating method of claim 37, wherein generating relative movement, said optically scanning at least a portion of the object, and said selectively activating said coating are preformed within a housing.